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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,738	05/18/2005	Hiroyasu Inoue	890050.525USPC	9394

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EXAMINER

NGUYEN, LINH THI

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/535,738	Applicant(s) INOUE ET AL.	
	Examiner Linh T. Nguyen	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 13-18 are rejected under 35 U.S.C. 102(b) as being unpatentable by Hideki et al (JP 2001/243655).

In regards to claims 1 and 17, Hideki et al discloses a method and apparatus for recording data in an optical recording medium wherein the optical recording medium includes a substrate (Fig. 1), a protective layer (Fig. 1, elements 6 and 8) and a plurality of information recording layers (Fig. 1, elements 4 and 7) between the substrate (Fig. 1, elements 1, 3, and 5) and the protective layer (Fig. 1, elements 6 and 8) the method for recording data in an optical recording medium comprising: projecting a laser beam onto the plurality of information recording layers (Fig. 3) whose power is modulated between at least three levels (Fig. 4, P1-4) including a level corresponding to a recording power (Fig. 4, P1), a level corresponding to an intermediate power lower (Fig. 4, P2) than the recording power and a level corresponding to a bottom power lower (Fig. 4, P4) than the intermediate power onto at least one information recording layer other than an information recording layer farthest from the light incidence plane and forming a recording mark in the at least one information recording layer other than the information recording layer farthest from the light incidence plane, thereby recording data therein

(Paragraph [0027] and [0043]).

In regards to claim 2, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 1, wherein the level of the bottom power is set so that a region of the at least one information recording layer other than the information recording layer farthest from the light incidence plane (Fig. 1, elements 3, 4, and 5) heated by irradiation with the laser beam whose power is set to the recording power can be cooled during irradiation with the laser beam whose power is set at the bottom power (Fig. 4, element P1 and P4).

In regards to claim 3, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 1, wherein the power of the laser beam is set to the bottom power when it is projected onto the end portion of each of the recording marks (Fig. 4, P4; and Paragraph [0054]).

In regards to claim 4, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 2, wherein the power of the laser beam is set to the bottom power when it is projected onto the end portion of each of the recording marks (Paragraph [0054]).

In regards to claim 5, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 1, wherein the power of the laser beam is

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set to the intermediate power when it is projected onto a region between neighboring recording marks to be formed in the at least one information recording layer other than the information recording layer farthest from the light incidence plane (Paragraph [0053]).

In regards to claim 6, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 2, wherein the power of the laser beam is set to the intermediate power when it is projected onto a region between neighboring recording marks to be formed in the at least one information recording layer other than the information recording layer farthest from the light incidence plane (Paragraph [0027]).

In regards to claim 7, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 3, wherein the power of the laser beam is set to the intermediate power when it is projected onto a region between neighboring recording marks to be formed in the at least one information recording layer other than the information recording layer farthest from the light incidence plane (Paragraph [0027]).

In regards to claim 8, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 4, wherein the power of the laser beam is set to the intermediate power when it is projected onto a region between neighboring

recording marks to be formed in the at least one information recording layer other than the information recording layer farthest from the light incidence plane (Paragraph [0027]).

In regards to claims 13 and 14, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 1, wherein data are recorded by employing an objective lens and a laser beam whose numerical aperture NA and wavelength λ satisfy $\lambda/NA \leq 640$ nm, and projecting the laser beam onto the optical recording medium via the objective lens (Paragraph [0045]).

In regards to claims 15 and 16, Hideki discloses a method for recording data in an optical recording medium in accordance with claim 1, wherein the protective layer is formed of a light transmissible material and the laser beam is projected onto the plurality of the information recording layers via the protective layer (Paragraph [0029]).

In regards to claim 18, Hideki discloses an optical recording medium which includes a substrate (Fig. 1, elements 1 and 5), a protective layer (elements 6 and 8) and a plurality of information recording layers (Fig. 1, elements 2 and 4) between the substrate and the protective layer and is constituted so that a laser beam (Fig. 1, element 11) is projected onto the plurality of information recording layers via a light incidence plane constituted by either the substrate or the protective layer (Fig. 1), thereby recording data in the plurality of information recording layers, the optical

recording medium being recorded with data for setting data recording conditions necessary for projecting a laser beam whose power is modulated between at least three levels (Fig. 4) including a level corresponding to a recording power (Fig. 4, element P1), a level corresponding to an intermediate power lower (Fig. 4, element P2 or P3) than the recording power and a level corresponding to a bottom power lower (Fig. 4, element P4) than the intermediate power onto at least one information recording layer (Fig. 1, element 2 and 4) other than an information recording layer farthest from the light incidence plane (Fig. 1, element 4) when a recording mark is to be formed in the at least one information recording layer other than an information recording layer farthest from the light incidence plane, thereby recording data therein (Paragraph [0027] and [0043]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hideki et al in view of Yamada et al (US Publication 2001/0017833).

In regards to claim 9, 10, 11 and 12, Hideki does not but Yamada et al discloses a method for recording data in an optical recording medium, wherein the power of the laser beam is modulated so that a time period during which the power of the laser beam is set to the bottom power (Fig. 1, i.e. e) for forming the end portion of each of the

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recording marks becomes longer as a linear recording velocity is higher (Fig. 1a-d; from low speed (Fig. 1a) to high speed (Fig. 1d) and e power is longer in terms of $3T$). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Hideki method recording data in an optical recording medium to have bottom power time longer at the end portion of the recording marks as linear velocity increase as taught by Yamada et al. The motivation for doing so would have been to obtain high signal quality as recording speed increases.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh T. Nguyen whose telephone number is 571-272-5513. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
May 23, 2006


ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER